

WHAT IS CLAIMED IS:

1. A fluid machinery including a sliding mechanism comprising one side member composed, in combination, of a
5 metallic base member having a sliding surface and a lubrication film formed on the sliding surface in a close contact thereto, and a counterpart side member containing fluorocarbon resin in an amount of at least 50 wt.%, said lubrication film including a solid lubricant having a self-lubrication property and a binder of resin
10 material.
2. A fluid machinery according to claim 1, wherein said resin material for the binder comprises epoxy resin.
- 15 3. A fluid machinery according to claim 1, wherein said resin material for the binder comprises polyamideimide resin.
4. A fluid machinery according to claim 1, wherein said solid lubricant contains at least one selected from the group consisting
20 of graphite, molybdenum disulfide, boron nitride, antimony oxide and mica.
5. A fluid machinery according to claim 1, wherein said metallic base member is formed of aluminum alloy.
25
6. A fluid machinery according to claim 5, wherein said

aluminum alloy has a Rockwell hardness of at least 60.

7. A fluid machinery according to claim 5, wherein a hard film,
which is formed of any one of alloy materials of Ni-P, Ni-B and
5 Ni-P-B having a nickel content of at least 80 wt.%, is applied to a
portion between the metallic base member of the aluminum alloy
and the lubrication film containing the solid lubricant.

8. A fluid machinery according to claim 1, wherein said
10 counterpart side member constitutes a sealing unit on a movable
member side and is composed of the fluorocarbon resin of 50 wt.%
and a balance including either one of a fiber reinforced material
and a filling material.

15 9. A fluid machinery according to claim 8, wherein said filling
material is an organic material.

10. A fluid machinery according to claim 1, wherein said
sliding mechanism is operated under a condition without lubricant
20 oil supply.

11. A fluid machinery according to claim 1, wherein said
sliding mechanism comprises a movable seal unit slidable in
contact to a component of the fluid machinery so as to provide a
25 sealing function.

12. A fluid machinery including a helical compression mechanism and an Oldham ring constituting a revolution prevention mechanism, said Oldham ring comprising a ring member formed of a metallic material and a key member mounted
5 on the ring member to be slidable with respect to a counterpart member, said key member being formed of resin material containing fluorocarbon resin of at least 50 wt.%, and said counterpart member comprises a metallic base member having a sliding surface and a lubrication film formed on the sliding surface
10 in a close contact thereto, said lubrication film including a solid lubricant having a self-lubrication property and a binder of resin material.

13. A fluid machinery according to claim 12, wherein said key
15 member is mounted on the ring member by means of a fitting pin, which has a head portion, a support portion and an insertion portion, said key member having a through-hole into which said fitting pin is inserted, and said key member having a length longer than that of the support portion of the fitting pin.

20

14. A fluid machinery according to claim 12, wherein said key member has a receiving surface on which said counterpart member slides in a contact state.

25 15. A fluid machinery according to claim 12, wherein said key member is formed by grinding a blank key member having a rough

dimension, which is provided on the ring member, into a predetermined dimension.

16. A fluid machinery comprising:

5 a helical mechanism constituting a helical compressor including a cylinder in which a sliding mechanism comprising a roller and a helical blade is arranged;

a driving unit operatively connected to the helical compressor to drive the same; and

10 an Oldham ring provided for preventing a revolution of the roller of the sliding mechanism,

said sliding mechanism comprising one side member composed, in combination, of a metallic base member having a sliding surface and a lubrication film formed on the sliding surface
15 in a close contact thereto, and a counterpart side member containing fluorocarbon resin in an amount of at least 50 wt.%, said lubrication film including a solid lubricant having a self-lubrication property and a binder of resin material.